

In the Claims

Claims 1 – 14 (Cancelled)

15. (Currently Amended) A preform for vacuum assisted injection molding comprising:

a thermosetting resin as a matrix resin;

a plurality of stacked and integrated substrates including at least one reinforcing carbon fiber substrate comprising a reinforcing carbon fiber yarn group arranged with reinforcing carbon fiber yarns having a yield of 350 to 3,500 tex in parallel to each other in a warp-direction and having a mean gap between adjacent reinforcing carbon fiber yarns in a range of 0.1 to 1 mm, and a weft-direction auxiliary yarn group formed by auxiliary yarns extending in a direction across said reinforcing carbon fiber yarns and having a yield of 1 % or less of the yield of said reinforcing carbon fiber yarn, and having a yield of 2 tex or less; and

a powder-interlamina-toughening resin material containing thermoplastic polyetherimide, polyphenyleneether or polyethersulfone as a main constituent provided at 2 to 17 % by weight and studded at least on a surface of said reinforcing carbon fiber substrate;

such that when a composite material having a reinforcing carbon fiber volume fraction of 53 to 65 % is molded, the composite material satisfies at least two of the following properties:

(a) a compressive strength at a room temperature after impact at an impact energy of 6.67 J/mm determined by a method defined in SACMA-SRM-2R-94 is 240 MPa or more; and

(c) a 0° compressive strength at a room temperature determined by a method defined in SACMA-SRM-1R-94 is 1,350 MPa or more, and a 0° compressive strength at a high temperature after a hot/wet conditioning determined by the method is 1,100 MPa or more.

16. (Previously Presented) The preform according to claim 15, wherein said substrate has a warp-direction auxiliary yarn group formed by auxiliary yarns extending in a direction parallel to said reinforcing carbon fiber yarns, and the yield of the auxiliary yarn forming said warp-direction auxiliary yarn group is 20 % or less of the yield of said reinforcing carbon fiber yarn.

17. (Previously Presented) The preform according to claim 15, wherein said substrate has a warp-direction auxiliary yarn group formed by auxiliary yarns extending in a direction parallel to said reinforcing carbon fiber yarns, a weft-direction auxiliary yarn group is disposed on each surface of said substrate, and said substrate is formed as a uni-directional noncrimp woven fabric the weave structure of which is formed by auxiliary yarns forming said warp-direction auxiliary yarn group and auxiliary yarns forming said weft-direction auxiliary yarn group.

18. (Previously Presented) The preform according to claim 16, wherein a mean gap between adjacent reinforcing carbon fiber yarns is in a range of 0.1 to 1 mm, and sizing of collecting treatment is preformed on auxiliary yarns forming said warp-direction auxiliary yarn group.

19. (Previously Presented) The preform according to claim 15, wherein said powder-interlamina-toughening resin material is studded on at least a surface of said reinforcing carbon fiber substrate, a mean diameter of said studded resin material on the surface of said reinforcing carbon fiber substrate, viewed in plane, is 1 mm or less, and a mean height of said studded resin material from the surface of said reinforcing carbon fiber substrate is in a range of 5 to 250 μm .

Claims 20 – 21 (Cancelled)

22. (Currently Amended) The preform according to claim 15, wherein, when a composite material having a reinforcing carbon fiber volume fraction of 53 to 65 % is molded, the composite material satisfies at least two of the following properties ~~(a)~~ (b) ~~[[to]]~~ and (d):

~~(a) a compressive strength at a room temperature after impact at an impact energy of 6.67 J/mm determined by a method defined in SACMA-SRM-2R-94 is 240 MPa or more;~~

(b) a non-hole compressive strength at a room temperature using a laminate having a lamination structure defined in SACMA-SRM-3R-94 is 500 MPa or more; and

~~(c) a 0° compressive strength at a room temperature determined by a method defined in SACMA-SRM-1R-94 is 1,350 MPa or more, and a 0° compressive strength at a high temperature after a hot/wet conditioning determined by the method is 1,100 MPa or more; and~~

(d) an open-hole compressive strength at a room temperature determined by a method defined in SACMA-SRM-3R-94 is 270 MPa or more, and an open-hole compressive strength at a high temperature after a hot/wet conditioning determined by the method is 215 MPa or more.

Claims 23 - 45 (Cancelled)

46. (Currently Amended) The preform according to claim 15, wherein the thermosetting resin is an ~~ex~~epoxy resin or a bismaleimide resin.